

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: :  
Robert R. STEUER et al. :  
Application No. (NEW) : TC/Art Unit: (not yet assigned)  
Filed: December 9, 2003 : Examiner: (not yet assigned)  
For: SENSOR FOR TRANSCUTANEOUS : Atty Docket: P65684US3  
MEASUREMENT OF VASCULAR :  
ACCESS BLOOD FLOW :  
: :  
:

**NOTICE OF RELATED PATENT APPLICATIONS AND PATENTS**  
**AND INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 CFR 1.97**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Applicant hereby informs the Examiner that U.S. Applications Nos. 09/750,122, filed December 29, 2000, and 09/765,584, filed January 22, 2001, and U.S. Patents Nos. 5,351,686 5,456,253, and 6,246,894 are assigned to the same entity as the present patent application, and are believed to be classified in related technologies. It is suggested that the Examiner review these applications and these patents for possible relevance to the present application.

Submitted herewith on form PTO-1449 is a listing of documents known to Applicants and/or their attorney in compliance with the requirements of 37 CFR 1.56. Copies of the documents are

not being submitted, as these documents were previously cited by or submitted to the Patent and Trademark Office in the parent application, Serial No. 09/750,076, filed December 29, 2000. See 37 CFR 1.98(d) and MPEP 609A(2).

Since the Information Disclosure Statement is filed before the issuance of the first Office Action on the merits or within three months of filing, no fee is required. The Commissioner is hereby authorized to charge fees under 37 CFR § 1.17 which may be required for consideration of this paper; or credit any overpayment to Deposit Account No. 06-1358.

In accordance with 37 CFR § 1.97(g) and (h), the filing of this Information Disclosure Statement shall not be construed as a representation that a search has been made, or as an admission that the information cited herein is, or is considered to be, material to patentability as defined in 37 CFR § 1.56(b).

Applicants do not waive any rights to appropriate action to establish patentability over the listed documents should they be applied as references against the claims of the present application.

#### RELEVANCE OF THE DOCUMENTS

All of the documents were previously cited by or submitted to the Patent and Trademark Office in the parent application, Serial No. 09/750,076, filed December 29, 2000.

## **CONCLUSION**

It is respectfully requested that the Examiner initial and return a copy of the enclosed Form PTO-1449, and to similarly indicate in the official file wrapper of this patent application that the attached documents have been considered.

If the Examiner has any questions or wishes to discuss this application, the Examiner is invited to telephone the undersigned representative at the number set forth below.

Respectfully submitted,

JACOBSON HOLMAN, PLLC

Date: December 9, 2003

By: 

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Registration No. 28,264

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Washington, D.C. 20004  
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## Form PTO-1449

## Information Disclosure Citation

Attorney Docket P65684US3	Application No. (NEW)
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Applicant

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Filing Date

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Group Art Unit

(not yet assigned)

## U.S. Patent Documents

Examiner Initial		Patent Number	Date	Name	Class	Sub-Class	Filing Date
	AA	H1,114	12/1992	Schweitzer et al.			
	AB	3,638,640	02/01/1972	Shaw			
	AC	3,880,151	04/29/1975	Nilsson et al.			
	AD	4,014,321	03/29/1977	March			
	AE	4,081,372	03/28/1978	Atkin et al.			
	AF	4,086,915	05/02/1978	Kofsky et al.			
	AG	4,167,331	09/11/1979	Nielsen			
	AH	4,181,610	01/01/1980	Shintani et al.			
	AI	4,223,680	09/23/1980	Jöbsis			
	AJ	4,266,554	05/12/1981	Hamaguri			
	AK	4,295,470	10/20/1981	Shaw et al.			

## Foreign Patent Documents

		Document Number	Date	Country	Class	Sub-Class	Trans-lation
	AL	EP104772B1	04/1984	Europe			Yes No
	AM	EP160768B1	11/1985	Europe			Yes No
	AN	WO 86/06946	12/1986	WIPO			Yes No
	AO	WO 89/01758	03/1989	WIPO			Yes No
	AP	WO 93/06456	04/1993	WIPO			Yes No

## Other Documents (Including Author, Title, Date, Pertinent Pages, etc.)

AR	J.P. Payne and J.W. Severinghaus, Eds., <i>Pulse Oximetry</i> , Chapters 1 and 2 (©1986).
AS	John D. Bower and Thomas G. Coleman, <i>Circulatory Function During Chronic Hemodialysis</i> , Vol. XV <i>Trans. Amer. Soc. Artif. Int. Organs</i> , 1969, 373-377.
AT	Larry Reynolds, C. Johnson, A. Ishimaru, "Diffuse reflectance from a finite blood medium: applications to the modeling of fiber optic catheters," Sept. 1976, Vol. 15, No. 9, <i>Applied Optics</i> , pp. 2059-2067.

Examiner	Date Considered
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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Examiner Initial		Patent Number	Date	Name	Class	Sub-Class	Filing Date
	BA	4,416,285	11/22/1983	Shaw et al.			
	BB	4,446,871	05/08/1984	Imura			
	BC	4,653,498	03/31/1987	New, Jr. et al.			
	BD	4,655,225	04/07/1987	Dahne et al.			
	BE	4,685,464	08/11/1987	Goldberger et al.			
	BF	4,714,080	12/22/1987	Edgar, Jr., et al.			
	BG	4,770,179	09/13/1988	New et al.			
	BH	4,805,623	02/21/1989	Jöbsis			
	BI	4,819,752	04/11/1989	Zelin			
	BJ	4,821,734	04/18/1989	Koshino			
	BK	4,824,242	04/25/1989	Frick et al.			

**Foreign Patent Documents**

		Document Number	Date	Country	Class	Sub-Class	Trans-lation
	BL	EP 0 529 412	03/03/1993	EPO			Yes No
	BM						Yes No
	BN						Yes No
	BO						Yes No
	BP						Yes No

**Other Documents** (Including Author, Title, Date, Pertinent Pages, etc.)

BR	R.N. Greenwood, C. Aldridge, L. Goldstein, L.R.I. Baker and W.R. Cattell, "Assessment of arteriovenous fistulae from pressure and thermal dilution studies: clinical experience in forearm fistulae," <i>Clinical Nephrology</i> , Vol. 23, NO. 4-1985, pp. 189-197.
BS	R.N. Greenwood, C. Aldridge and W.R. Cattell, "Serial blood water estimations and in-line blood viscometry: the continuous measurement of blood volume during dialysis procedures," <i>Clinical Science</i> (1984)66, pp. 575-583.
BT	C. Aldridge, R.N. Greenwood, W.R. Cattell and R.V. Barrett, "The assessment of arteriovenous fistulae created for haemodialysis from pressure and thermal dilution measurements," <i>Journal of Medical Engineering &amp; Technology</i> , Vol. 8, No. 3, (May/June), pp. 118-124.

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Examiner Initial		Patent Number	Date	Name	Class	Sub-Class	Filing Date
	CA	4,825,872	05/02/1989	Tan et al.			
	CB	4,825,879	05/02/1989	Tan et al.			
	CC	4,832,484	05/23/1989	Aoyagi et al.			
	CD	4,863,265	09/05/1989	Flower et al.			
	CE	4,867,557	09/19/1989	Takatani et al.			
	CF	4,920,972	05/01/1990	Frank et al.			
	CG	4,925,299	05/15/1990	Meisberger et al.			
	CH	5,028,787	07/02/1991	Rosenthal et al.			
	CI	5,035,243	07/30/1991	Muz			
	CJ	5,048,524	09/17/1991	Bailey			
	CK	5,054,487	10/08/1991	Clarke			

**Foreign Patent Documents**

		Document Number	Date	Country	Class	Sub-Class	Trans-lation
	CL						Yes No
	CM						Yes No
	CN						Yes No
	CO						Yes No
	CP						Yes No

**Other Documents** (Including Author, Title, Date, Pertinent Pages, etc.)

CR	L. Goldstein, L. Pavitt, R.N. Greenwood, C. Aldridge, L.R.I. Baker and W.R. Cattell, "The Assessment of Arteriovenous Fistulae From Pressure and Recirculation Studies," <i>ProcEDTNA-ERCA</i> (1985) Vol. 14., pp. 207-215.
CS	R.N. Greenwood, C. Aldridge, L. Goldstein, L.R.I. Baker and W.R. Cattell, "Assessment of Arteriovenous Fistulas From Pressure and Recirculation Studies: Clinical Experience In 215 Upper Limb Fistulas," <i>ProcEDTA-ERA</i> (1985), Vol. 22, pp. 296-302.
CT	Joseph M. Schmitt, James D. Meindl and Frederick G. Mihm, "An Integrated Circuit-Based Optical Sensor for In Vivo Measurement of Blood Oxygenation," <i>IEEE Transactions On Biomedical Engineering</i> , Vol. BME-33, No. 21, Feb. 1986, pp. 98-107.

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	DA	5,057,695	10/15/1991	Hirao et al.			
	DB	5,058,587	10/1991	Kohno et al.			
	DC	5,059,394	10/22/1991	Phillips et al.			
	DD	5,066,859	11/19/1991	Karkar et al.			
	DE	5,092,836	03/03/1992	Polaschegg			
	DF	5,101,825	04/07/1992	Gravenstein et al.			
	DG	5,111,817	05/12/1992	Clark et al.			
	DH	5,127,406	07/07/1992	Yamaguchi			
	DI	5,137,023	08/11/1992	Mendelson et al.			
	DJ	5,158,091	10/27/1992	Butterfield et al.			
	DK	5,193,543	03/16/1993	Yelderman			

**Foreign Patent Documents**

		Document Number	Date	Country	Class	Sub-Class	Trans-lation
	DL						Yes No
	DM						Yes No
	DN						Yes No
	DO						Yes No
	DP						Yes No

**Other Documents** (Including Author, Title, Date, Pertinent Pages, etc.)

DR	Joseph M. Schmitt, Fred G. Mihm and James Meindl, <i>New Methods for Whole Blood Oximetry</i> , Annals of Biomedical Engineering, Vol., 14, pp. 35-52, 1986.
DS	Mark R. Arnfield, J. Tulip and Malcolm McPhee, "Optical Propagation in Tissue With Anisotropic Scattering," <i>IEEE Transactions on Biomedical Engineering</i> , Vol. 35, No. 5, May 1988, pp. 372-381.
DT	N.M. Krivitski, "Theory and validation of access flow measurements by dilution technique during hemodialysis," <i>Kidney Int</i> 48:244-250, 1995

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	EA	5,237,999	08/24/1993	Von Berg			
	EB	5,285,783	02/15/1994	Secker			
	EC	5,351,686	10/04/1994	Steuer et al.			
	ED	5,456,253	10/10/1995	Steuer et al.			
	EE	5,499,627	03/19/1996	Steuer et al.			
	EF	5,520,177	05/28/1996	Ogawa et al.			
	EG	5,551,422	09/3/1996	Simonsen et al.			
	EH	5,595,182	01/21/1997	Krivitski			
	EI	5,785,657	07/28/1998	Breyer et al.			
	EJ	5,797,841	08/25/1998	Delonzor et al.			
	EK	5,803,908	09/08/1998	Steuer et al.			

**Foreign Patent Documents**

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	EL						Yes No
	EM						Yes No
	EN						Yes No
	EO						Yes No
	EP						Yes No

**Other Documents** (Including Author, Title, Date, Pertinent Pages, etc.)

ER	N.M. Krivitski, "Novel method to measure access flow during hemodialysis by ultrasound velocity dilution technique," <i>ASAIO J</i> 41:M741-M745, 1995
ES	T.A. Depner and N.M. Krivitski, "Clinical measurement of blood flow in hemodialysis access fistulae and grafts by ultrasound dilution," <i>ASAIO J</i> 41:M745-M749, 1995)
ET	D. Yarar et al., "Ultrafiltration method for measuring vascular access flow rates during hemodialysis," <i>Kidney Int.</i> , 56: 1129-1135 (1999)

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	FA	5,817,009	10/06/1998	Rosenheimer et al.			
	FB	5,974,337	10/26/1999	Kaffka et al.			
	FC	6,041,246	03/21/2000	Krivitski et al.			
	FD	6,117,099	09/12/2000	Steuer et al.			
	FE	6,153,109	11/28/2000	Krivitski			
	FF	6,167,765	01/02/2001	Weitzel			
	FG	6,189,388	02/20/2001	Cole et al.			
	FH	6,210,591	04/03/2001	Krivitski			
	FI	6,452,371	09/17/2002	Brugger			
	FJ						
	FK						

**Foreign Patent Documents**

		Document Number	Date	Country	Class	Sub-Class	Trans-lation
	FL						Yes No
	FM						Yes No
	FN						Yes No
	FO						Yes No
	FP						Yes No

**Other Documents** (Including Author, Title, Date, Pertinent Pages, etc.)

FR	N.M. Krivitski et al., "Saline Release Method to Measure Access Flow (AF) by Ultrasound Dilution during Hemodialysis," <i>JASN Abstracts</i> , 8:164A, 1997
FS	
FT	

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